DOCUMENT RESUME

ED 063 679 24 EA 004 409

AUTHOR	Simonds, J. Todd; St. Lawrence, Theodora
TITLE	Methodological and Theoretical Bases for Designing Local Educational Change Programs. Research Training Through a Multiple System Consortium, Paper Number 2.
INSTITUTION	Pittsburgh Univ., Pa. Learning Research and Development Center.
SPONS AGENCY	National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
BUREAU NO	BR-5-0253
PUB DATE	Apr 72
CONTRACT	OEC-4-10-158
NOTE	18p.; Paper presented at American Educational Research Association Annual Meeting (57th, Chicago, Ill., April 3-7, 1972)
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Change Agents; Curriculum Development; *Educational Change; *Educational Programs; *Methodology; *Models; Planning; Problem Solving; Program Administration; Program Descriptions; *Program Design

ABSTRACT

To develop the methodology of designing local educational change, the R & D center staff first identified four critical weaknesses leading to the failures of changes attempted in schools. These weaknesses were categorized as (1) change made without prior analysis of its effects on the whole system, (2) change imposed externally without regard to specific local needs, (3) change made for the sake of change without regard to fundamental reform, and (4) no organism within the system with specific responsibility for the design and maintenance of the change. Independently, a multicomponent closed system was modified to work within the system model to prevent the critical faults from occurring. The modification resulted in an 11-step task flow. Finally, packages of interpersonal, analytical, and information-gathering skills were developed to aid the change specialist in performing the tasks. This paper describes the development of the task flow. Related documents are EA 004 408, EA 004 410, and EA 004 411. (Author)

22.14

RESEARCH TRAINING THROUGH A MULTIPLE SYSTEM CONSORTIUM: SIX PAPERS

1. The Pittsburgh-Based Project to Train Educational R&D Personnel. Glen Heathers

2. Methodological and Theoretical Bases for Designing Local Educational Change Programs. J. Todd Simonds and Theodora St. Lawrence

3. Making Local Change Programs Relevant to Students' Needs. John L. Morgan and Alfonzo Washington

4. The Design of Programs to Train Personnel to Develop and Conduct Programs of Local Change. Robert F. Nicely, Jr.

5. Individualizing Guidance and Training of Local Change Specialists. Hiawatha Fountain

6. Evaluation of Programs to Train Educational R&D Personnel. Jane P. Woodward and John L. Yeager

Learning Research and Development Center
University of Pittsburgh

April, 1972

Published by the Learning Research and Development Center, supported in part as a research and development center by funds from the United States Office of Education, Department of Health, Education and Welfare. The opinions expressed in this paper do not necessarily reflect the positions or policy of the Office of Education and no official endorsement should be inferred.

METHODOLOGICAL AND THEORETICAL BASES FOR DESIGNING LOCAL EDUCATIONAL CHANGE PROGRAMS

J. Todd Simonds and Theodora St. Lawrence

Learning Research and Development Center
University of Pittsburgh

April, 1972

Presented at the Annual Meeting of the American Educational Research Association, Chicago, Illinois, April 6, 1972. The research and development reported herein was performed as part of the R&D Project at the Learning Research and Development Center, University of Pittsburgh.

METHODOLOGICAL AND THEORETICAL BASES FOR DESIGNING LOCAL EDUCATIONAL CHANGE PROGRAMS

J. Todd Simonds and Theodora St. Lawrence
Learning Research and Development Center
University of Pittsburgh

There is no defined discipline of educational change. The process of change in a school has been analyzed by a dozen different disciplines, each discipline bringing to the analysis its own assumptions and parameters of delimitation. To teach from such a fragmented base yields confusion, for it ignores the integrity of the change process itself. To work from this base, to attempt to change a school by applying the disparate bits of knowledge about educational change, is even less plausible. When the R&D Training Project at the Learning Research and Development Center set out to train professionals to design local educational change programs, this problem was immediately encountered. The first major job, therefore, was the development of a cohesive, structured methodology for designing change that incorporated the principal insights of the various disciplines. This methodology, the task flow for the design of local educational change programs and its related techniques, evolved from an analysis of attempts to change schools. For each of the programs encountered in such attempts, one or more disciplines prescribe preventive approaches. These approaches, when inter-related and structured, produced the task flow, the series of steps which the local change specialist (LCS) should follow to produce significant positive changes in a school. The task flow is appended; this paper describes its development.

The development of the task flow began with a study of actual educational change programs to identify critical weaknesses. These weaknesses, the causes of the failures of many changes attempted in schools, can be grouped into four major categories. They are as follows:

(a) The change is made without prior analysis of its effects on the whole system, often creating stress between the innovation and the unchanged elements of the system. For example, major changes in a curriculum, such as the introduction of an innovative reading program, are not accompanied by adjustments in the other curricular areas. This results in negative attitudes toward the innovation, and a tendency to revert to the prior state.

(b) The change is imposed externally, without regard to specific local needs. For example, some state departments of education mandate the use of specific curricular materials system-wide. While these materials may have demonstrated value in certain settings, they rarely work in the full range of schools within the system. Where they are not appropriate, even their full use will leave gaps in the education of the children affected. Further, local administrators and staff, having little voice in the selection of these materials, do not invest themselves fully in their implementation.

(c) The change is made for the sake of change, without regard to fundamental reform. The school administrator task force within the project consortium admitted frankly that pressure to keep abreast of educational "fashion" motivates many instructional

changes. This tendency increases the likelihood that the change will be superficial, with little relation to real needs or to defensible goals of education.

(d) There is no organism within the system with specific responsibility for the design and maintenance of the change. When this fault occurs, the program is continually dependent upon an external change agents. The change is adoptive rather than adaptive. Local personnel, with no control over or responsibility for the design, are less tolerant of the probable inefficiency and ambiguity during the period of implementation, with a strong tendency to revert to former practices.

To avoid these faults, the designer of change programs must employ a planning approach that specifically prevents their occurrence.

The first weakness mandates that the task flow for designing change programs be based on a model of systemic change. Parsons[2] defines a social system as "a complex of interdependencies between parts, components, and processes that involves discernible regularities of relationship, and ... a similar type of interdependency between such a complex and its environment." A school meets all the aspects of this definition. Systemic change is the alteration of overall structure (arrangement of the components) or of one of the components, with a corresponding adjustment in other components. It produces its outcomes through the use of the organization's operations, such as communication, reallocation of power, and reallocation of resources. A system tends to maintain a steady state, that is, an efficient method for operating and maintaining feedback about its operation has evolved. Its elements tend toward

progressive segregation, with each achieving an increasingly greater degree of autonomy. When a change is introduced, this steady state is disrupted, creating conflict. The components, previously segregated, are forced into new relationships with other components; the feedback mechanisms, related to past performance, no longer pertain. The system is in limbo: it can either reject the change and revert to its former state, or it can adjust to the change, establishing a new balance. To assure that the latter happens, the leader of change must build new communication mechanisms, making constructive use of the conflicts, to achieve a new inter-relation of the components.

Any school (in fact any situation in which instruction occurs) can be described and analyzed as a system made up of the following twelve components:

1. curriculum: the scope (content) and sequence (arrangement) of learning objectives toward which the students work.
2. learning materials: the books, films and oral presentations providing the cues which enable the students to meet the objectives.
3. plant and equipment: the nature of the physical facilities, and specialized equipment such as audio visual systems, computers, teaching machines, etc.
4. organization for instruction: the formal plan for scheduling, grouping students, and assigning staff.
5. instructional methods: technique employed by teachers to assist students in achieving curriculum objectives.
6. students: their personality, social and learning characteristics.

7. faculty: | social background, professional competencies
8. administrators: | and biases.
9. community: the larger social, economic and political system in which the school operates.
10. administrative and budgetary policies
11. co-curricular and extra-curricular activities
12. special programs: such as Head Start, exceptional children programs, etc.

Any data descriptive of a school of any size and complexity can be categorized within one of these components. Any transaction within the school can be described as the predictable interaction of two or more components. The schema thus provides a conceptual framework for arranging information, and it points to interactions which have a critical effect on the organization and control of change.

This schema is vital to any model for planning change in schools. When one component of the system is changed, that component's relationships with other components will change. Some of these new relationships will support the initial change, and some will decrease the possibility of its being effective. The planner of change must therefore be able to predict what will happen when a change is introduced, and on the basis of that prediction to judge whether the change should be introduced.

The components of an instructional system interface in a variety of ways. The type of interface most critical to predicting the feasibility of change is when one component places a demand on another. For example, a particular scope and sequence demands a set of related learning materials; an open classroom organization for instruction demands a specific set of teacher competencies

and biases, an elastic curriculum, and so forth. If the system is in balance, one can assume that all the demands are being met. However, a change in one component will create a new set of demands. If the demand is for something that already exists within the system, the change is supported. If however, the initial change demands something that cannot be found within the system, the situation imposes a constraint on the implementation of that change. When such is the case, the planner can either meet the new demand by introducing an auxiliary change or reject the initial proposed change as unfeasible. If the task flow for the design of change is based on this system schema and is sensitive to the use of system operations, the first major weakness can be prevented.

The other three weaknesses are symptomatic of change which is coercive or reactive as defined by Guba[2] (1970). They can be prevented, therefore, by relating the task flow to a model of planned change. Maguire[3], in his summary of the literature on change, assigns the following characteristics of planned change:

--It includes basic problem-solving phases

--It is a deliberative and collaborative process involving a change agent and client system

--It entails mutual goal setting and equal power ratio on the part of all sides

--It considers the mechanisms of change and techniques for guiding the process

Each of these characteristics dictates some aspect of the task flow:

a. Provide for basic problem-solving phases. Miles[4] (1964) proposes a five-stage problem-solving model for the introduction of a change, evolving

as follows: "criticism of existing program; presentation of proposed changes and their classification; review and reformulation of proposals and comparison of alternative proposals; action decisions; implementation of action decisions." Heathers modified this, expanding it slightly, to include the following steps:

(1) Identify the problem through one of three modes: needs analysis (a need is identified; how can it be met?); crisis recognition (a difficulty is encountered; how can it be overcome?); or research utilization (a resource is created; how can it be put to use?). All three modes stem from a discrepancy between goals (potential) and actual performance.

(2) Analyze the problem to identify the necessary characteristics of a solution. The problem is assumed to be symptomatic of some system malfunction. If the problem-solver specifies the nature of the malfunction, he will be cued to the kind of adjustment necessary. Further, this step takes account of critical situational conditions, such as the urgency of presenting a solution, which will influence subsequent steps.

(3) Identify or generate alternative approaches to solving the problem. The problem-solver must be willing to commit time and resources to gather as much information as possible. The prior step defines the parameters of this information. The probability of developing the optimum solution increases with the amount of information generated within those parameters.

(4) Select one approach (perhaps an amalgam of several alternatives) and develop a plan to implement it. The four principal criteria for this selection are relevance, power, efficiency,

and feasibility. The implementation plan must specify all the adjustments which must be made in the system to accomodate the new elements.

(5) Implement and assess the plan. This demands the prior development of feedback mechanisms for each stage of the implementation, including methods for evaluating interim performance.

(6) Utilize feedback data as a basis for revising the plan of judging the solution satisfactory.

This model is the skeleton of the task flow for designing and conducting a change program.

b. Provide a deliberative and collaborative process involving a change agent and client system. This condition of planned change dictates roles and relationships of the people involved in change. First, it demands the existence of a change agent role sharply differentiated from other roles in the system. (Role is here defined as a set of expectations about a person's behavior.) Even if the change agent holds a position within the system (as is often the case), he must assume a specific role throughout the design process.

The role is simply that of the deliberator, defining and guiding the problem-solving process. This is in contradistinction to normal system roles of maintaining current operations. The deliberative change agent must have freedom from maintenance responsibilities; change which develops as a function of maintenance is reactive rather than planned change. The change agent, freed from normal system responsibilities, brings applicable skills in guided problem-solving. This is the role of the local change specialist. Obviously, the

client system cannot free itself from normal maintenance responsibilites, unless discontinuation of operations for a long period of time is feasible, which is rarely the case. The client system must therefore assume the role of collaborator, commiting human and other resources to the design and implementation process and, most important, committing itself to the acceptance of reasonable solutions.

These roles must be established at the very outset of the change process, and organically maintained throughout. This requires the addition of a prior step to the task flow, that of developing a "contract" with the school. Thought the contract may in fact be a legal document, as when a research organization consults with a school, it is not restricted to that sense. The contract is simply a clear understanding of the role and status of the change specialist, and of the commitment of the client to the change process. This task is called Task 0, reflecting its essential priority and its importance through the design and implementation.

c. Provide for mutual goal-setting and an equal power ratio. There is no power inherently allocated to the role of local change specialist. Whatever power is applied to the conduct of the change program is borrowed from sources within the system. In the normal state of the system, this power will be dispersed, probably unequally, among the various groups which have a stake in the operation of the system. To meet this condition of planned change, the local change specialist must see that all of these interest groups share the decision-making power relative to the change, and that this power is divided equally among men. The change agent thus creates a special group within the system, representative of all other groups in the system. The

power which this group holds will be applied to the change program only; with the power comes a correlative responsibility for the success of the change program. Thus the change specialist, in creating a special equitable power base, creates an organism with specific responsibility for the design and maintenance of the changes.

The creation of this group is a part of Task 0. In his contract with the school, the change specialist must stipulate the equal participation of all parties. In the early stages of the design process, he must apply his skills to the development of participants into a functioning task force. Further, he must continually work towards the transference of all responsibility for the change to this group. Because his role is supranormal, he must, in effect, build himself out of a job. It should be clear to all parties from the outset that the LCS role will terminate when the special group within the system possesses all the skills necessary for the completion of the change process.

The first step in the problem-solving model is problem identification, specifying the discrepancy between goals and actual performance. This assumes the existence of a set of stated goals. Such an assumption is unrealistic. Most schools have stated goals only at the most general level, which do not suffice as working goals. Problem indentification therefore divides into two tasks: determining goals (objectives) for the system or subsystem of concern (Task 1) and assessing accomplishments of the objectives (Task 2). Goal-setting is accomplished by the representative group created by the local change specialist. Because power is distributed equally within this group, the goals which they eventually propose must be mutually acceptable to all interest groups, thus fulfilling another condition of planned change. The

LCS's contribution to goal-setting is twofold. First, he must make certain that the goals proposed are realistic, operational objectives, that is, they are attainable and measurable. Second, he must try to introduce fundamental goals, those that, if met, would constitute basic reform. Obviously, the LCS must have a firm knowledge of fundamental reform themes and the ways in which they are manifested in instructional systems.

d. Take into account the mechanisms of change and techniques for guiding the process. The mechanisms of change are the interactions between components of the school; to fulfill this characteristic of the planned change model, the systems model of a school had to be fully integrated into the task flow.

This integration is most critical at three points: the analysis of problem causes, the analysis of constraining and supporting factors relative to the potential resources for problem solution, and the development of the implementation plan. Once a problem has been identified by comparing goals with achievement, the system malfunctions which are causing the problem must be identified. In a system, the identified problem will be an inappropriate or incomplete aspect of one component. The malfunction will be inappropriate or ineffectual relationship between two or more components. To pinpoint the possible causes of the problem, the analyst must examine the interface between the problem component and each of the others. For example, the problem may be a lack of real use of independent study opportunities, an aspect of organization for instruction. The analyst examines the relationship of the organization component with each of the others. Considering the curriculum component, independent study obviously requires a flexible scope and sequence.

The absence of such flexibility would be a major cause of the problem. "Inflexible scope and sequence" is therefore recorded as a potential cause factor, to be validated or rejected on the basis of information gathered about the actual scope and sequence. In the learning materials component, materials must be available beyond those used in normal course work. As to facilities, there must be space to accommodate individual or small group work. In short, the interface between the organizational component and each of the others may point to a potential cause of the problem. Those potential causes, when validated with information about the school, will guide the search for solutions. In this manner, the eventual change will be a function of the system mechanics.

The analysis of constraining and supporting factors relative to proposed resources for solving a problem is performed in terms of the demand relationships between components discussed on page 5 of this paper. The purpose of constraint/support analysis is to identify systemic conditions which will effect, positively or negatively, the implementation of a particular resource unit. The process is similar to causal analysis. The component which is to be the major locus of the change has a determinable set of demand relationships with all of the other components. When the proposed change is implemented, a different set of demands will be imposed. If these demands can be met by resources which currently exist in the system, the proposed change has a good probability of successful implementation. If they cannot be met, the planner must provide for them if the initial change is to be implemented. Thus through constraint/support analysis the planner can predict the success of implementing a resource based on its potential for integration into the system. This prediction will guide the planner in selecting the optimum elements for the change.

The information generated by constraint/support analysis also guides the planner in developing the implementation plan. Such a plan must provide for the creation of all the conditions necessary for the successful operation of the system after the change has been introduced. The constraint/support analysis indicates all the new demands which the change will impose. If the planner provides for meeting all those demands, he guarantees the existence of all the elements necessary for the smooth operation of the system once the change is implemented. Thus by performing the analysis steps within the task flow in terms of systemic mechanics, the change specialist creates a change program which incorporates the mechanics of systemic change.

A planned change model also calls for the use of valid techniques for guiding the process of change. The primary system operations are communication, allocation of resources, and allocation of power. The local change specialist must use these operations constructively during the design and implementation of the change. The reallocation of power is accomplished through the establishment of the special group responsible for the change, as discussed earlier. The reallocation of resources is a responsibility of this group; clearly, the success of any change requires the allocation of supportive resources. These two operations are guided by the local change specialist, who applies principles of intra-system communication, especially those related to small-group, task-oriented work.

The task flow for the design of local educational change which ultimately evolved is attached. Derived from theoretical models of systemic and planned change, it combines a basic problem-solving approach with a sensitivity to goals of change, system analysis and interpersonal dynamics. Instruction in the use of the task flow, along with instruction in reform themes, analysis

and interpersonal skills, forms the content base of the LRDC program to train local change specialists.

Footnotes

(1) Parsons, Talcott "Social Systems." International Encyclopedia of the Social Sciences, New York, 1968, Vol. 15, p. 459.

(2) Maguire, Louis M. Observations and Analysis of the Literature on Change. Philadelphia, 1970, p. 10.

(3) Ibid. p. 10-12.

(4) Miles, Mathew. "Educational Innovation: Some Generalizations." Media and Educational Innovation, W.C. Meierhenry, editor, Lincoln, Nebr., 1964, p. 176.

Task Flow for the Design of Local Educational Change Programs

Task 0 Develop the working relationship with the school. Organize a task force representative of all groups in the school. Clarify the deliberator/collaborator role relationship. Specify the working arrangements and necessary resources, and generate the commitment of all parties to the design process.

Task 1 Determine the system's goals (operational objectives) in the area of concern. Propose additional objectives commensurate with the themes of educational reform.

Task 2 Determine present level of accomplishment of the objectives.

Task 3 Identify the causes of the shortcomings revealed in Task 2 by analyzing the interface between the components related to the shortcomings.

Task 4 Using the data from Task 3, select the initial points of attack, defining the kind of solution desired.

Task 5 Survey resources for solving the problem defined in Task 4. Describe the critical characteristics of relevant resources.

Task 6 Identify and analyze systemic constraints and supports which will affect the desirability of using the various resources identified in Task 5.

Task 7 On the basis of Task 6 information, select the elements of the change program, meeting criteria of efficacy, efficiency, relevance and feasibility.

Task 8 Specify the essential features of the implementation plan. For each of the resources selected, determine, from Task 6 information, the related adjustments that must be made in the system.

Task 9 Design the change program, specifying operations, time lines and personnel to meet the requirements identified in Task 8.

Task 10 Design the evaluation plan and procedures.

Bibliography

Bennis, Warren G. "A Typology of Change Processes," The Planning of Change, First Edition, Bennis, Benne, Chin, eds., New York: Holt, Rinehart, Wineton, Inc., 1961.

Buchanan, Paul C. "The Concept of Organization Development or Self-Renewal, as a Form of Planned Change," Concepts for Social Change, Watson, ed., Washington, D.C.: Cooperative Project for Educational Development, National Training Laboratories, National Educational Association, 1967.

Maguire, Louis M. Observations and Analysis of the Literature on Change. Philadelphia: Research for Better Schools, Inc., 1970.

Miles, Mathew B. "Educational Innovation: Some Generalizations," Media and Educational Innovation, Meierhenry, ed., Lincoln, Nebr.: University of Nebraska Press, 1964.

Miles, Mathew B. and Dale G. Lake "Self-Renewal in School Systems: A Strategy for Planned Change," Concepts for Social Change, Watson, ed. Washington, D.C.: Cooperative Project for Educational Development, National Training Laboratories, National Educational Association, 1967.

Parsons, Talcott "Social Systems," International Encyclopedia of the Social Sciences, New York: MacMillan Company and The Free Press, 1968.

Sanders, Irwin T. "Approaches to Social Change," The Planning of Change, First Edition, Bennis, Benne, Chin, eds. New York: Holt, Rinehart, Winston, Inc., 1961.